

CLAIMS

What is claimed is:

- 1 1 A method of adaptively controlling an antenna pattern of a wireless
2 communications device in a packet-switched wireless communications
3 network, the method comprising the steps of:
4 receiving an electromagnetic signal over the packet-switched wireless
5 communications network by a wireless communication device having a receive
6 antenna pattern;
7 determining if the electromagnetic signal is from an intended or
8 unintended source; and
9 adapting the receive antenna pattern if the electromagnetic signal is from
10 an unintended source.
- 1 2. The method of claim 1 wherein the determining step further comprises
2 comparing an identifier of the source included in the electromagnetic signal to
3 a list of identifiers associated with intended sources to determine that the
4 source is an intended source.
- 1 3. The method of claim 1 wherein the determining step further comprises
2 comparing an identifier of the source included in the electromagnetic signal to
3 a list of identifiers associated with unintended sources to determine that the
4 source is an unintended source.

1 4. The method of claim 1 further comprising the step of weighting the
2 received electromagnetic signal.

1 5. The method of claim 4 wherein the adapting step further comprises
2 creating a null in the receive antenna pattern at a location determined in
3 response to the location of the unintended source.

1 6. The method of claim 1 wherein an unintended source is a cordless
2 telephone.

1 7. The method of claim 1 wherein an unintended source is a node in the
2 network.

1 8. An apparatus for adaptively controlling an antenna pattern of a wireless
2 network device in a packet-switched wireless communications network, the
3 apparatus comprising:

4 first and second antenna elements each receiving an electromagnetic
5 signal from a source over the packet-switched network and forming a receive
6 antenna pattern;

7 a verification module, in communication with the antenna elements,
8 receiving the signal from the antenna elements and verifying whether the
9 source of the signal is an intended or unintended source; and

10 a controller in communication with at least one of the antenna elements
11 and with the verification module to adaptively control the receive antenna

12 pattern in response to a determination that the source of the electromagnetic
13 signal is an unintended source.

1 9. The apparatus of claim 8 wherein the controller comprises a weighting
2 module having a complex weight associated therewith in communication with
3 at least one antenna element and a determination module in communication
4 with the weighting module and the verification module, the determination
5 module determining the complex weight used to generate a null in the receive
6 antenna pattern at a location determined in response to the location of the
7 unintended source.

1 10. The apparatus of claim 8 wherein the electromagnetic signal contains
2 information indicative of a specific network protocol, the information being
3 used to verify the source of the signal as an intended or unintended source.

1 11. The apparatus of claim 8 further comprising a combination module in
2 communication with the first and second antenna elements to combine the
3 received signal from each of the antenna elements.

1 12. The apparatus of claim 8, wherein the apparatus is a wireless network
2 card.

1 13. The apparatus of claim 8, wherein the unintended source is a cordless
2 telephone.

1 13. The apparatus of claim 8, wherein the unintended source is a node in the
2 network.

1 14. In a packet-switched wireless communications network, a method for use
2 by a wireless communication device having a plurality of antennas to control a
3 direction of communication over the network, the method comprising the steps
4 of:

5 cooperatively producing by the plurality of antennas of the wireless
6 communication device an antenna pattern for exchanging electromagnetic
7 signals over the packet-switched wireless communications network; and
8 adapting the antenna pattern produced by the plurality of antennas in
9 response to an electromagnetic signal received over the packet-switched
10 wireless communications network to control a direction of subsequent
11 communication over the network.

1 15. The method of claim 14, wherein the antenna pattern is a receive
2 antenna pattern.

1 16. The method of claim 14, wherein the adapting of the antenna pattern
2 reduces noise in subsequently received electromagnetic signals.

1 17. The method of claim 14, wherein the adapting of the antenna pattern
2 increases a signal-to-noise ratio of transmitted electromagnetic signals.

1 18. The method of claim 14, wherein the adapting of the antenna pattern
2 reduces an effect of interference from an interfering source.

18. The method of claim 14, wherein the adapting of the antenna pattern
reduces an effect of interference from an interfering source.